

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended): A method of sending first and second signals to a plurality of user equipments, the method comprising :

providing a dedicated channel for each one of the plurality of user equipments,

providing a code-multiplexed shared channel for each of a first set and a second set of the plurality of user equipments,

splitting the plurality of user equipments substantially evenly into a first group of user equipments which are assigned to a first carrier frequency and into a second group of user equipments which are assigned to a second carrier frequency~~plurality of groups,~~

~~assigning an antenna of a set of antennas to each of the plurality of groups,~~

sending ~~one of~~ the first signals to ~~one of~~ the plurality of user equipments on ~~one of~~ the dedicated channels on ~~at the first and second carrier frequency-frequencies~~ by applying transmit diversity through a plurality of antennas, and simultaneously sending ~~one of~~ the second signals to the first set and second set~~one of~~ the plurality of user equipments on the code-multiplexed shared ~~channel-channels~~ on the first and second carrier frequency-frequencies by applying multi-user diversity through ~~an the plurality of antennas~~ antenna assigned to a group among the plurality of groups which includes the one of the plurality of user equipments, and

~~assigning the carrier frequency to each user equipment in the group which includes the one of the plurality of user equipments; and~~

~~assigning a second carrier frequency to each user equipment in another group among the plurality of groups,~~

~~wherein the first carrier frequency and the second carrier frequency are alternately assigned to the plurality of user equipments in an order in which the plurality of user equipments become active,~~

~~wherein each of the first signals is assigned to either the first carrier frequency or to the second carrier frequency.~~

~~wherein the first set and second set are assigned to the first and second frequencies respectively, and the user equipments in one of the first and second sets are assigned to different antennas among the plurality of antennas.~~

~~wherein the first signals are real time signals and the second signals are non-real time signals.~~

2. (Previously presented): The method of claim 1, wherein the dedicated channel is a DPCH type channel and the code-multiplexed shared channel is a HS-DSCH type channel of a HSDPA type system.

3. (Previously presented): The method of claim 1, further comprising:

assigning a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,

assigning a carrier frequency of the set of carrier frequencies to each one of the plurality of user equipments.

4. (Original): The method of claim 3, further comprising applying transmit diversity for sending of the one of the second signals.

5. (Previously presented): The method of claim 4, wherein closed loop transmit diversity is applied.

6. (Currently amended): A computer readable recording medium having tangibly stored thereon a computer program for enabling a computer to control a sending of first and second signals to a plurality of user equipments, the program comprising:

providing a dedicated channel for each one of the plurality of user equipments,

providing a code-multiplexed shared channel for each of a first set and a second set of the plurality of user equipments,

splitting the plurality of user equipments substantially evenly into first group of user equipments which are assigned to a first carrier frequency and into a second group of user equipments which are assigned to a second carrier frequency, and

~~assigning an antenna of a set of antennas to each of the plurality of groups,~~

sending ~~one of the first signals to one of the plurality of user equipments on one of the dedicated channels on the first and second carrier frequency frequencies~~ by applying transmit diversity through a plurality of antennas, and simultaneously sending ~~one of the second signals to one of the first set and second set~~ of the plurality of user equipments on the code-multiplexed shared ~~channel channels~~ on the first and second carrier frequency frequencies by applying multi-user diversity through an antenna assigned to a group among the plurality of groups which includes the one of the plurality of user equipments, and

~~assigning the carrier frequency to each user equipment in the group which includes the one of the plurality of user equipments; and~~

~~assigning a second carrier frequency to each user equipment in another group among the plurality of groups,~~

wherein the first carrier frequency and the second carrier frequency are alternately assigned to the plurality of user equipments in an order in which the plurality of user equipments become active,

wherein each of the first signals is assigned to either the first carrier frequency or to the second carrier frequency,

wherein the first set and second set are assigned to the first and second frequencies respectively, and the user equipments in one of the first and second sets are assigned to different antennas among the plurality of antennas,

wherein the first signals are real time signals and the second signals are non-real time signals.

7. (Currently amended): A transmitter which sends first and second signals to a plurality of user equipments, the transmitter comprising:

a first component which provides a dedicated channel for each one of the plurality of user equipments,

a second component which provides a code-multiplexed shared channel to each of a first set and a second set of the plurality of user equipments,

a third component which splits the plurality of user equipments substantially evenly into a first group of user equipments which are assigned to a first carrier frequency and into a second group of user equipments which are assigned to a second carrier frequency~~plurality of groups,~~

~~a fourth component which assigns an antenna of a set of antennas to each of the plurality of groups,~~

a ~~fourth~~^{fifth} component which sends ~~one of~~ the first signals to ~~one of~~ the plurality of user equipments on ~~one of~~ the dedicated channels on ~~the first and second~~ carrier frequency frequencies by applying transmit diversity through a plurality of antennas, and

a ~~fifth~~^{sixth} component which sends ~~one of~~ the second signals to the first set and second set one of the plurality of user equipments on the code-multiplexed shared ~~channel~~ channels on the first and second carrier frequency-frequencies by applying multi-user diversity,

wherein the ~~fourth~~^{fifth} component sends ~~the one of~~ the first signals simultaneous to the ~~fifth~~^{sixth} component sending ~~the one of~~ the second signals through the plurality of antennas ~~an~~ antenna assigned to a group among the plurality of groups which includes the one of the plurality of user equipments,

wherein the ~~fourth~~ component assigns the carrier frequency to each user equipment in the group which includes the one of the plurality of user equipments, and assigns a second carrier frequency to each user equipment in another group among the plurality of groups,

wherein the first carrier frequency and the second carrier frequency are alternately assigned to the plurality of user equipments in an order in which the plurality of user equipments become active,

wherein each of the first signals is assigned to either the first carrier frequency or to the second carrier frequency,

wherein the first set and second set are assigned to the first and second frequencies respectively, and the user equipments in one of the first and second sets are assigned to different antennas among the plurality of antennas,

wherein the first signals are real time signals and the second signals are non-real time signals.

8. (Previously presented): The transmitter of claim 7, further comprising scheduler which provides the multi-user diversity.

9. (Previously presented): The transmitter of claim 7, further comprising:
means for assigning a carrier frequency of a set of at least first and second carrier frequencies to each one of the dedicated channels,

means for assigning of a carrier frequency of a set of carrier frequencies to each one of the user equipments.

10. (Currently amended): A telecommunication system for sending first and second signals to a plurality of user equipments, the telecommunication system comprising:

a first component which provides a dedicated channel for each one of the plurality of user equipments,

a second component which provides a code-multiplexed shared channel for each of a first set and a second set of the plurality of user equipments,

a third component which splits the plurality of user equipments substantially evenly into a first group of user equipments which are assigned to a first carrier frequency and into a second group of user equipments which are assigned to a second carrier frequency~~plurality of groups~~,

~~a fourth component which provides an antenna of a set of antennas to each one of the plurality of groups;~~

a ~~fourth~~^{fifth} component which provides ~~one of~~ the first signals to ~~one of~~ the plurality of user equipments on ~~one of~~ the dedicated channels on at the first and second carrier frequency frequencies by applying transmit diversity through a plurality of antennas, and

a ~~fifth~~^{sixth} component which provides ~~one of~~ the second signals to the first set and second set ~~one of~~ the plurality of user equipments on the code-multiplexed shared ~~channel channels~~ on the first and second carrier frequency frequencies by applying multi-user diversity,

wherein the ~~fourth~~^{fifth} component provides ~~the one of~~ the first signals simultaneous to the ~~fifth~~^{sixth} component providing ~~the one of~~ the second signals through ~~an~~^{the} plurality of antennas ~~antenna assigned to a group among the plurality of groups which includes the one of the plurality of user equipments;~~

~~wherein the fourth component assigns the carrier frequency to each user equipment in the group which includes the one of the plurality of user equipments, and assigns a second carrier frequency to each user equipment in another group among the plurality of groups,~~

wherein the first carrier frequency and the second carrier frequency are alternately assigned to the plurality of user equipments in an order in which the plurality of user equipments become active,

wherein each of the first signals is assigned to either the first carrier frequency or to the second carrier frequency, and

wherein the first set and second set are assigned to the first and second frequencies respectively, and the user equipments in one of the first and second sets are assigned to different antennas among the plurality of antennas,

wherein the first signals are real time signals and the second signals are non-real time signals.

11. Canceled.